

Towards Productive Disciplinary Engagement of Prospective Teachers in Educational Psychology: Comparing Two Methods of Case-based Instruction

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Although the use of cases for instruction is increasingly popular in educational psychology courses for prospective teachers, systematic research on how to best use them is just beginning. This paper contributes to this growing area of research with a design-based research project that used a comparative case study design. Specifically, we compared case discussions from two different sections of the same educational psychology course for student teachers, each taught by one of the authors. Case discussions in one section were characterized by broad participation but little grounding in psychological theory while those in the other section were characterized by strong use of psychological theory, but much narrower participation. We then used a set of principles for facilitating productive disciplinary engagement to help explain these differences, further testing and developing them. Each instructor's way of using cases had both positive and negative effects on the embodiment of the principles and thus on the nature of the student teachers' resulting engagement in discussions about them. We close by discussing the implications of the study for future research, theory development and the use of case discussions, especially in relation to how they can be reconfigured to better balance student authority with disciplinary accountability.

Keywords: case-based instruction, student engagement, educational psychology, teacher education

While it is commonly agreed that educational psychology courses should help prospective teachers bridge theory and practice, discussion continues in the field about how to best do that (e.g., Anderson et al. 1995; Kiewra & Gubbels, 1997; Shuell, 1996; Snowman, 1997; Woolfolk Hoy, 2000). One approach that has become increasingly popular is case-based teaching (Johnson & Morgan, 2003; Ormrod, 2000; Shulman, 1992; Sudzina, 1997, 2000).

More specifically, previous research in teacher education has suggested that case-based instruction may be a particularly promising way of addressing the theory-practice gap because cases:

- often depict realistic classroom situations that illustrate psychological concepts and thus help to deepen teachers' understanding of them (Allen, 1994; Ormrod, 2000);
- may illustrate concepts from multiple theories, allowing teachers to compare and synthesize them (Merseth, 1991; Ormrod, 1998)
- can provide teachers with compelling visions of effective practices (Stein,

Hughes, Engle, & Smith, 2003; Sutton, 2003); and

- can allow pre-service teachers to reflect on how they might solve typical classroom problems before having to face them in the full press of a real classroom.

In addition, teaching effectively with cases can provide a model of the kinds of constructivist teaching that many would like prospective teachers to learn (Sudzina, 1997).

Although case-based instruction is popular for these and other reasons, there is little systematic research on how to best use cases in educational psychology courses (Lundeberg, Levin, & Harrington, 1999; Sudzina, 1997). However, there has been a growing movement by educational psychology instructors to document their use of cases with the kind of precision that supports reflection on the possible consequences for teachers' learning (Allen, 1994; Faux, 1999; Lundeberg & Scheurman, 1997; Ormrod, 2000; Sudzina & Kilbane, 1994; Sudzina, 1997, 2000).

In this paper, we contribute to this effort by presenting a design-based research project (e.g., Brown, 1992; Cobb, Confrey, diSessa, Lehrer, & Schauble, 2003; Collins, Joseph, & Bielaczyc, 2004; Design-based Research Collective, 2003)

in which we used a comparative case study design (Dion, 1998; Mahoney & Goertz, 1994; Yin, 1989) to systematically compare the teaching of two sections of educational psychology in which cases were used to support classroom discussions in contrasting ways. Although both sections used the same textbook, introduced student teachers to the same set of theories, and used written cases, there were differences between the sections in how cases were incorporated into the overall course design (Sudzina, 1997) and how case discussions were facilitated (Levin, 1999). We look at the effect of these differences on the nature of student teachers' substantive engagement in the case discussions. Neither section achieved the kinds of substantive engagement that the instructors were hoping for, though the discussions in each section fell short in different ways. To explain these differences, we extend a theoretical framework for explaining productive disciplinary engagement (Engle & Conant, 2002) that has been previously applied to student discussions in science, mathematics, and literacy (Cornelius & Herrenkohl, 2004; Webster & Conant, 2003). By using this theoretical framework, we hope to make three key types of contributions: (1) provide theoretical explanations for the empirical differences that we found in the quality of the discussions, (2) provide theory-based recommendations for how the course and our teaching of it could be re-designed to support better case discussions, and (3) in so doing, develop the theoretical framework further, providing additional empirical evidence for its utility.

In the next section, we briefly present the Engle & Conant (2002) framework and explain how we plan to extend and test it through this study. This is then followed by a description of the course, the data that we collected in our two sections, and the methods we used to analyze those data. Next we turn to findings about differences in student teachers' engagement in case discussions in each section of the course. In the core of the paper, we then use the Engle & Conant (2002) framework to explain these differences by analyzing the effects of the different instructional choices the instructors made. Finally, we close by addressing the implications of our analysis for theory, for future empirical research, and for future use of cases in other educational psychology courses for prospective teachers.

THEORETICAL FRAMEWORK

Engle and Conant (2002) proposed four principles for fostering productive, disciplinary engagement. Productive disciplinary engagement occurs when students are strongly engaged in a discussion, when that discussion makes strong contact with the academic discipline or disciplines that they are learning about, and when intellectual progress is made over the course of the discussion. Productive disciplinary engagement is viewed as a crucial prerequisite for learning, one which complements evidence derived from pre/post measures by providing information about the learning process that can be observed during a discussion itself.

In this study, we are extending the notion of disciplinary engagement in two ways. First, we are studying engagement in a new discipline, educational psychology, which complements previous studies that focused primarily on science, mathematics, and literacy (e.g., Cornelius & Herrenkohl, 2004; Engle, 2004; Engle & Conant, 2002; Leinhardt & Steele, 2005; Webster & Conant, 2003). Second, we extend the notion of disciplinary engagement to also include substantive engagement that is not disciplinary in nature by considering how prospective teachers also used practitioner discourses around schooling (Gee, 1999) to discuss classroom cases. In particular, this study provides the opportunity to consider the degree to which prospective teachers did and did not coordinate the discourses of classroom experience with the discourse of educational psychology, allowing us to consider the extent to which the case discussions had allowed them to productively bridge theory and practice.

No matter what kind of productive disciplinary engagement is at issue, Engle and Conant (2002) argued that four principles need to be realized in a learning environment to support it. We briefly outline each principle below.

Principle 1: Problematizing Content

The core idea behind problematizing content is that instructors should encourage learners to raise problems, questions, proposals, challenges, and other intellectual issues, rather than expecting learners to simply assimilate facts, procedures, and other "answers." This principle is consistent with constructivist pedagogy, especially as espoused in the science and mathematics reform literature (Hiebert et al., 1996; Lemke, 1990; Warren & Rosebery, 1996).

Principle 2: Giving Learners Authority

Engle & Conant's (2002) principle of authority refers to a number of aspects of learners' discourse and relationships to problems in a discipline; here we focus on two. First, learners need to have an active role, or *agency*, in defining, addressing, and resolving disciplinary problems (Cobb, 1997; Lampert, 1990a, 1990b). Second, learners' authority is enhanced when they are positioned as *stakeholders* by being publicly identified as the authors of the claims, approaches, explanations, designs, and other responses to problems that they pursue (Lampert, 1990a, 1990b; O'Connor & Michaels, 1996; Toma 1991; Wertsch & Toma, 1985).

Principle 3: Holding Learners Accountable to Others and to Disciplinary Norms

Holding learners *accountable* to others and to disciplinary norms means that the instructor and other members of the learning community foster learners' responsibility for ensuring that their intellectual work is responsive to the content and practices established by intellectual stakeholders inside and outside of their immediate learning environment (Resnick & Hall, 2001) as well as to relevant disciplinary norms. The accountability we refer to here is an internal accountability in which learners' influence within their learning environment is affected by how well they "account" for how what they are doing is responsive to both what others have done, and community norms for good practice (Lerner & Tetlock, 1999).

Principle 4: Resources

This final principle focuses on the need to provide students with fundamental resources such as sufficient time and relevant intellectual tools, and the like to enable them to productively engage in the kinds of disciplinary or other substantive work that they are being asked to do.

This study provides a particularly helpful forum for testing and developing the Engle & Conant (2002) principles because of two key contrasts between the circumstances of this study and those that preceded it. First, this study allowed investigation of what might be involved in getting the principles established in a new class. In previous research, classroom norms relevant to the principles had already been established by the time classroom discussions were recorded and analyzed. Because this study focused on two sections of a course from their very

beginnings, it was possible to consider what might be involved in getting these principles established in new classroom situations. Second, all previous studies examined cases in which productive disciplinary engagement was attained during class discussions; the issue in these studies was whether the principles would be useful in explaining these successes. In contrast, productive disciplinary engagement was not fully achieved in either section studied here. Thus, if the theory is valid, we should find that one or more of the principles was not fully embodied. Given that both instructors were familiar with the framework before teaching the course, it was possible that productive disciplinary engagement had not occurred despite the fact that the principles had been embodied (cf. Mahoney & Goertz, 2004).

METHODS

This study systematically compared discussions about classroom cases within two sections of an educational psychology course offered to prospective teachers enrolled in a Masters of Arts in Teaching program. One was taught Monday evenings by the first author and the other was taught Tuesday evenings by the second author. Below, we provide information about the design of the course, the students and instructors who participated in it, the data that were collected on it, and the analyses of those data.

Course Design*Similarities Between the Sections*

This educational psychology course was redesigned by the authors and two colleagues in the School of Education the summer before it was offered in order to achieve two goals of interest to the M.A.T. program: first, to establish some standardization between the sections; and second, as part of that standardization, to emphasize classroom cases as an integral component of instruction.

With respect to standardization, both sections were organized around the same two overarching psychological topics, which were presented in the same order: motivation, then learning. Within each topic, both sections also introduced the same set of psychological theories. For motivation, student teachers in both sections learned about behaviorist, cognitive, contextualist, and social cognitive theories. For learning, they were introduced to information processing, Piagetian, and sociocultural theories.

Students in both sections were assigned to read similar excerpts from the same textbook (McDevitt & Ormrod, 2002). The instructors also both assigned students to write short weekly reflection papers, which contributed the same percentage to students' final grades.

One key goal of the course, featured prominently in both syllabi, was for student teachers to be able to use a variety of psychological theories to address realistic educational problems; discussions of classroom cases were a primary instructional strategy chosen to achieve this goal. Written cases were drawn from two compilations: Greenwood, Fillmer, and Parkay (2002) and Jackson and Ormrod (1998). In both sections, student teachers were first taught educational psychology content and then required to analyze cases provided by the instructors. Cases were typically first analyzed in small groups of four or five, which was then followed by a whole class discussion. Finally, the last third of each course was devoted to final projects in which the student teachers researched, wrote, and orally presented a case from their own classrooms that they were asked to analyze using at least two of the psychological theories covered in the course.

Differences between the Sections

While many efforts at standardizing the course were successful, differences in how each section was conducted were inevitable given that two different instructors and groups of students were involved. The most salient differences were in the number of cases used, the sources of these cases, and their relationship to other activities in each section (see Table 1). For example, the Monday instructor used nine cases taken from both case books, while the Tuesday instructor used six cases taken exclusively from Greenwood et al. (2002). Most of the cases used in one section were not used in the other; only two happened to be selected by both instructors. In addition, in the Monday section, the instructor consistently chose cases that were closely linked to theories the students had just learned about. In the Tuesday section, such links were not consistently apparent. Later in the paper we will specifically address how these and other differences in the sections may have affected the nature of the engagement that the student teachers demonstrated in each section's case discussions.

Most students who took the educational psychology course were enrolled in a one year, full-time Master of Arts in Teaching program at a mid-Atlantic university. During the school year, these students served as full-time student teachers while also taking a full load of four required courses, each course meeting once a week for 15 weeks. Many of these student teachers had taken one or more psychology or development courses as undergraduates, so most were familiar with some relevant theories (especially behaviorism and Piagetian theory).

The Monday section included 36 student teachers, with 26 specializing in elementary education, 9 in secondary social studies, and 1 practicing teacher who was an M.A. student in mathematics education. The Tuesday section included 23 student teachers, with 11 specializing in secondary science, 11 in foreign languages (one with previous teaching experience), and 1 from a music education master's program at a nearby university.

This difference in the intended teaching areas of student teachers in the two sections also may have been a factor in the differences that emerged in case discussions. Although we did not know it at the time of the course, the local job market was particularly competitive at this time for students in the elementary education program and almost as competitive for students in the social studies education program. Student teachers in both programs, concentrated in the Monday night section, felt a great deal of pressure to get high grades in order to have a chance of getting a teaching position. In contrast, students in the foreign language education program typically achieved 100% placement in entry-level teaching positions locally while students in the science education program were likewise assured of finding a position, if not locally, then in other parts of the country. The potential impact of these differences will be discussed more fully later in the paper.

Both sections were taught by part-time instructors with PhDs in educational psychology. It was the first lead teaching experience for the first author who taught the Monday section. The second author, who taught the Tuesday section, had taught undergraduate educational psychology eight times and taught one previous offering of this course for MAT interns in which cases had been used.

Course Participants

Data Collected In Each Section

The primary data used for purposes of this paper are videotapes of the class meetings from each section, with a focus on excerpts during whole-class discussions of the cases. The Monday instructor videotaped the case discussions during the Tuesday section while various individuals taped the Monday section. These videotapes were augmented by the following other data sources: fieldnotes, overheads, handouts, course syllabi for each section, relevant textbook passages, the written cases the student teachers analyzed, and any instruction sheets they were given to guide them in their analyses before discussion.

Data Analyses

We performed two sets of analyses, which required repeated viewing of the videotapes by both authors and sometimes a research assistant and frequent references to the other data sources mentioned above in order to better interpret what was going on. The first set of analyses focused on documenting any differences in the student teachers' substantive engagement in the case discussions in each section. The second set of analyses focused on explaining the observed differences by analyzing how different instructional choices affected the degree to which the Engle & Conant (2002) principles were embodied in each section.

Analyses of the Student Teachers' Engagement in the Case Discussions

For purposes of assessing the nature of the student teachers' engagement in the case discussions, we coded three aspects of it and collected examples relevant to one other aspect. Our analyses focused on the degree to which the student teachers were engaged in the discussions and the degree to which that engagement made contact with both educational psychology and practitioner discourses. However, as it was clear that none of the discussions had fully achieved such disciplinary engagement, there was little point in measuring the degree to which the discussions were also productive as, by definition, this would be limited.

We began with three relatively low-inference, quantitative coding schemes to address the fact that we were serving as both the researchers and the instructors whose teaching outcomes were being assessed. As instructors, each of us had a deeply personal stake in how the results would come out. As researchers, we wanted to make sure that these obvious biases did not delude us. Reducing the complexity of inference needed in

the initial codings was one way to guard against such bias. In addition, the information that these codings provided about the frequencies of various events over time helped prevent us from focusing exclusively on one or two striking incidents, something that was very easy to do. Instead, we began to see how such events fit within a much larger distribution of occurrences. At the same time, however, we do grant that these kinds of quantitative measures often make simplistic assumptions about the nature of discourse that does not allow them to capture many important nuances (e.g., Schegloff, 1993). However, we decided that in this situation their benefits outweighed their costs. Having a base of initial findings about the nature of student teachers' engagement that we could rely on, we could then turn to some more interpretive and nuanced analyses in order to explain them.

Coding of the Student Teachers' Participation in the Case Discussions. First, as a basic measure of the student teachers' levels of engagement in the case discussions, we coded the proportion of student teachers who participated in each discussion and how frequently they did so. The first author and/or a research assistant watched the videotapes and recorded whenever each student teacher made a substantive contribution to the discussion. A substantive contribution was defined as an utterance or series of utterances that was presented by the student teacher as being somehow relevant to the case being discussed. It included everything that the student teacher said until another student teacher began making a substantive contribution. To be coded as making more than one contribution to a discussion, a student teacher would need to have said something else that was separated by a contribution made by at least one other student teacher. Thus, a student teacher's response to any comments or queries that the instructor might have made was counted as being part of the same contribution. Therefore, this is a fairly conservative, low-inference measure of how widely and how often student teachers participated in each discussion.

From this coding, we computed three measures: the percentage of student teachers who contributed to each discussion, the average number of contributions made per student teacher, and the mean number of new contributors per minute of discussion. The first two measures were expressed as proportions per student teacher to take into account the fact that the Monday section had more students than the Tuesday section. Correspondingly, the last measure was calculated on a per minute basis to

take into account the fact that the case discussions varied widely in length both within and between sections. On average, case discussions in the Monday section lasted somewhat longer ($\mu = 24$ min 58 sec; $SD = 11$ min 22 sec) than those in the Tuesday section ($\mu = 19$ min 26 sec; $SD = 7$ min 26 sec), although there was more than enough variability within sections so that this mean difference was not statistically reliable ($t(13) = 1.05, p = .31$).

Coding of the Student Teachers' Use of Educational Psychology Terms. This second coding was intended to give us a quick measure of the degree to which the student teachers' engagement with the case discussions was grounded in the discipline of educational psychology. To do this, we adapted a coding methodology used by Lundeborg and Scheurman (1997) and looked for evidence that the student teachers had used educational psychology terms that had been presented in class when discussing the cases. Since some cases are likely to encourage use of more educational psychology terms than others, we focused our coding for this analysis on the two cases that were discussed in both sections: *The Little Engine that Couldn't* and *Which is Higher?*, both from Greenwood et al. (2002). Drawing on relevant textbook chapters, lecture notes, course handouts, and the case itself, we first constructed lists of psychological terms that the student teachers could have drawn on in their analyses of each case. For example, included in our list of 109 terms for the motivation-oriented case, *The Little Engine That Couldn't*, were terms like "learned helplessness," "reinforcement," and "attribution." We then identified when, if at all, student teachers had used each term during the discussion, with repetitions of a term during the same teacher contribution counted only once because that concept had already been introduced. For terms like "motivation" and "expectation" that are used both in common parlance and in a more technical sense in educational psychology, we listened carefully to what the student teachers said about the terms to determine whether they were being used in a technical sense, only coding the term as disciplinary if it was clear that this was how it was being used. Although we recognize that students' use (or non-use) of technical terms does not necessarily reflect their degree of understanding of the concepts to which they refer, coding of such terms did provide an efficient and reliable measure of the degree to which the student teachers had adopted one fundamental element of the discourse practice of educational psychology, namely its terminology.

Coding of the Student Teachers' Use of Their Classroom Experiences. Consistent with our goal to expand the Engle & Conant (2002) framework to consider substantive engagement in important discourses beyond disciplinary ones, we also coded student teachers' use of their own classroom experiences during the case discussions. To do this, we identified all references to classroom experiences in the two comparable pairs of case discussions, *Which is Higher?* and *The Little Engine that Couldn't*. These references were almost always at a larger grain size than the educational psychology terms identified in the previous coding. Instead of specific terms that referred to classroom experiences, student teachers would most often relate a story from a classroom in which they had taught or been a student, usually connecting it to issues from the case that was being discussed. Each such new story from a new individual was coded as a new reference to classroom experiences. Given the differences in grain size between references to educational psychology versus to classroom experiences, even if equivalent attention was paid to both sources, one might expect fewer numbers of references to classroom experiences than to educational psychology terms.

Observations About Student Teachers' Positioning of Their Contributions to the Discussions. Finally, while reflecting on case discussions after facilitating them and then coding the videotapes of them afterwards, we were struck by one additional aspect of the student teachers' engagement that appeared to differ between the sections: how the student teachers typically positioned their contributions to the case discussions. Specifically, some positioned their contributions as representing their own conclusions about the issues raised by the case while others seemed to be trying to give "right answers," or the conclusions they thought the instructor was looking for. We decided to look for evidence relevant to this issue as we believe that students are more likely to use knowledge in the future if they have a greater degree of ownership over it (see Engle, in press).

Analyses of Instructional Choices Affecting the Embodiment of the Principles

Having documented the extent and nature of the student teachers' engagement in the case discussions in each section, the next analytic step was to explain these patterns by analyzing how three of the four principles in the Engle and Conant (2002) framework were embodied in each class section. We decided to focus just on the principles of *problematizing*, *authority*, and

accountability for purposes of this analysis, as there were already so many issues involved in successfully embodying these three that consideration of whether sufficient resources had been provided to the students was somewhat moot.

However, as we continued to be concerned about our personal interests inappropriately leading us to particular interpretations, we decided to begin our analysis by first documenting differences in observable instructional choices and only then considering the potential impact of each of these choices on the embodiment of the principles in each section. In addition, we felt that instructional choices would be a unit of analysis that would be likely to correspond to the level at which other instructors make decisions about how to use cases in their instruction while still providing helpful illustrations of what it might look like to embody (or not quite embody) each principle.

Specifically, in this analysis we considered the potential impact of differences between the sections on four types of instructional choices: the instructors' choices of which cases to discuss, their methods for introducing case discussions, their methods for responding to participants' contributions to the discussions, and their grading practices. We analyzed the impact of each of these instructional choices on the embodiment of the principles of *problematizing*, *authority*, and *accountability*. Finally, we considered how this might help us understand differences in how the student teachers engaged in case discussions in each section.

RESULTS

Differences in Student Teachers' Disciplinary Engagement in Case Discussions

Student Teachers' Participation in the Case Discussions.

Student teachers' overall participation in case-based whole group discussions differed quantitatively in each section. As shown in Table 1, on average a higher percentage of student teachers contributed to case discussions in the Tuesday section ($\mu = 57.6\%$, $SD = 8.1\%$) than in the Monday section ($\mu = 38.1\%$, $SD = 12.1\%$), a statistically reliable result ($t(13) = 3.40$, $p < .01$). However, there was no significant difference between sections in the mean number of contributions made per student teacher in each discussion ($\mu_{\text{Monday}} = 0.93$ vs. $\mu_{\text{Tuesday}} = 1.07$; $t(13) = 0.70$, $p = .50$). There was also a marginally significant trend in the direction of more new contributors per minute in the Tuesday discussions ($\mu = 0.74$, $SD = 0.21$) than the Monday discussions ($\mu = 0.56$, $SD = 0.19$; $t(13) = 1.80$, $p = .09$). Putting these results together, it appears that a smaller proportion of student teachers usually contributed to any one case discussion in the Monday section, but that each contributor may have contributed somewhat more frequently than in the Tuesday section. These levels of participation are significantly higher than the mean participation of 26% found in a previous study of 20 university humanities and social science classes (Nunn, 1996), with the Monday section roughly corresponding to the 75th percentile and the Tuesday section to the 90th percentile of classes in that study. However, given that most classes in the Nunn study devoted only one or two minutes to class discussions, our interpretation is that the Tuesday discussions were characterized by fairly solid levels of participation while the Monday discussions varied from rather low to relatively solid levels of participation depending on the discussion.

Table 1. Student teachers' participation in the case discussions in each section

Week	Case	Theories most relevant to case	Theories just discussed in class	Length (min.)	% of sts. contributing	Inputs /stud.	Inputs /min.
MONDAY SECTION							
3	"Throwing Tantrums"	Social-cognitive	Social-cognitive	42:30	44%	1.31	0.38
3	"Distracting Influence"	Social-cognitive	Social-cognitive	21:47	28%	0.53	0.46
4	"The Perfectionist"	Cognitive-motivational	Cognitive-motivational	26:36	53%	1.17	0.72
5	"The Bulletin Board"	Two above plus Behaviorism	Two above plus Behaviorism	41:41	60%	1.24	0.48
6	"The Little Engine That Couldn't"	Three above plus Contextualism	Three above plus Contextualism	26:24	33%	0.73	0.42
7	"Learning the Lines"	Information processing	Information processing	26:44	41%	1.22	0.48
8	"Pollution"	Piagetian	Piagetian	13:56	24%	0.55	0.50
9	"The Research Paper"	Vygotskian	Vygotskian	12:23	35%	0.47	0.97
10	"Which Is Higher?"	All 3 theories above	All 3 theories above	12:44	26%	1.19	0.68
Monday Means				24:58	38%	0.93	0.56
Monday SDs				11:22	12%	0.35	0.19
TUESDAY SECTION							
2	"Glory That Was Greece"	Cognitive-motivational	Cognitive-motivational; Behaviorism	17:40	57%	0.87	0.74
3	"The Comedienne"	Social-cognitive; Behaviorism	Social-cognitive; Cog-motivational	24:47	57%	1.26	0.52
4	"The Little Engine That Couldn't"	Three above plus Contextualism	Contextualism	14:36	65%	1.00	1.03
7	"To Retain or Not to Retain"	None (focus on social dev. level)	Piagetian	32:00	70%	1.74	0.50
8	"Withdrawn Wanda"	Behaviorism; Social Cognitive; Cog-Motivational; Contextualism	Vygotskian	13:50	52%	0.91	0.89
9	"Which is Higher?"	Info. Processing, Piagetian, Vygotskian	Information Processing	14:08	46%	0.63	0.78
Tuesday Means				19.26	58%	1.07	0.74
Tuesday SDs				17.27	9%	0.39	0.21

Student Teachers' Use of Educational Psychology Terms in the Case Discussions.

The frequency and types of references to disciplinary knowledge during the case discussions also differed between the sections. As shown in Table 2, student teachers used more educational psychology terms during both of the two comparable discussions in the Monday section than they did in the Tuesday section. In particular, in both Monday discussions, student teachers used more educational psychology terms ($\mu_{\text{Monday}} = 15.5$ vs. $\mu_{\text{Tuesday}} = 6.0$) and they did so more often ($\mu_{\text{Monday}} = 25.0$ vs. $\mu_{\text{Tuesday}} = 8.0$). Normalizing these measures to take into account

differences in the lengths of the discussions, there was still more use of psychology terms in the Monday discussions than the Tuesday discussions (1.43 vs. 0.56 terms per minute, and 0.90 vs. 0.42 unique terms per minute).

Overall, from analyzing the two comparable pairs of discussions, it appears that there was more explicit use of educational psychology concepts in the Monday section than in the Tuesday section. In addition, our observations of the rest of the case discussions in both classes are consistent with this pattern of more use of disciplinary terms and concepts in the case discussions on Monday as compared to Tuesday.

Table 2. Use of educational psychology terms in each section during discussions around two cases

Case	Section	Length (min.)	# Teacher inputs	# Times terms mentioned	# Unique terms mentioned	Terms per min	Unique terms per min.	Terms per teacher contribution
"The Little Engine That Couldn't"	Mon.	26:24	24	26	16	0.98	0.61	1.08
	Tues.	14:36	23	7	5	0.48	0.34	0.30
"Which Is Higher?"	Mon.	12:44	37	24	15	1.88	1.18	0.64
	Tues.	14:05	15	9	7	0.64	0.50	0.60
MEANS	Mon.	19:34	30.5	25.0	15.5	1.43	0.90	0.86
	Tues.	14:21	19.0	8.0	6.0	0.56	0.42	0.45

Student Teachers' Use of Their Classroom Experiences

We found somewhat opposite differences between the sections in the extent to which student teachers used their own classroom experiences—either as students or as student teachers—in discussing the two common cases. In particular, student teachers in the Tuesday section seemed to draw liberally on their classroom experiences in discussing the cases, while references to personal classroom experiences or other forms of clinical expertise were rare in the Monday section. For example, when discussing *Which is Higher?*, there were six

references to such classroom experiences on Tuesday but none on Monday. Similarly, when discussing *The Little Engine that Couldn't*, there were five references on Tuesday but only two on Monday. This last difference is particularly notable given that the Monday instructor (but not the Tuesday instructor) had explicitly told the student teachers beforehand that solving the challenging problems in this case would require that they draw on their "practitioner expertise." In our experience, this general pattern held in the rest of the cases discussed in each section (with perhaps even fewer references to classroom experiences in the other Monday discussions).

Student Teachers' Positioning of Their Contributions to the Discussions

We noted one more qualitative difference in student teachers' discussions around the cases in the two sections. In the Monday section, student teachers often did not seem to be presenting what they personally thought about either the case or the theories, but instead what they thought the instructor would consider a correct application of theoretical concepts to the case in question. It was not unusual for student teachers to seek out feedback from the instructor about whether what they had said about the case was correct or not, and to judge their own contributions in terms of a correct/incorrect judgment scheme. In contrast, in the Tuesday section, student teachers usually appeared to be offering their personal ideas about the cases. There were more frequent uses of phrases like "I think," "I believe," and the like, in which student teachers explicitly associated themselves with particular knowledge claims (Engle & Conant, 2002). Thus, when the Tuesday night student teachers made use of any psychological concepts, one got the sense that the concepts they had used were ones that they personally believed were valid, rather than ones they were adopting temporarily for purposes of impressing the instructor and doing well in the class. This difference is important, because one might expect student teachers to be more likely, in their future teaching, to use concepts that they had more personal ownership over than those that they had adopted temporarily for practical reasons (see Engle, in press).

DISCUSSION: POSSIBLE EFFECTS OF FOUR INSTRUCTIONAL CHOICES

We now turn to considering how four different instructional choices—which cases to discuss, how to introduce case discussions, how to respond to student teachers' contributions during discussions, and instructors' grading practices—might have affected the embodiment of the Engle and Conant (2002) principles, and thus the different patterns of engagement we found in each section.

Choice of Cases to Discuss

The instructors had available to them cases from the Greenwood et al. (2002) and Jackson and Ormrod (1998) casebooks. The Greenwood et al. (2002) cases claim to reflect the most difficult or most frequently experienced problems

that student teachers face in actual teaching situations. They are from seven to eight pages long, are written in the form of a play script, often include additional data such as student exam scores or demographic information, and provide many details, only some of which are relevant for addressing the multifaceted problems in the cases. In contrast, the Jackson and Ormrod (1998) cases are only one to three pages long, are written in the form of a focused narrative with quotations, and do not include additional data or extra details. Some of these cases depict relatively effective teaching practices, but most present problematic classroom situations, some of which are resolved by the end of the case. All of the Jackson and Ormrod cases were explicitly designed to illustrate one or two particular psychological theories, with a chart at the beginning of the book identifying which cases are relevant to which theories. The Greenwood et al. (2002) cases also include a list of potential theoretical concepts to consider in analysis, but the instructors removed these lists from the cases before presenting them to the student teachers.

The Tuesday instructor exclusively used the longer, more complex cases from Greenwood et al. (2002), while the Monday instructor used six cases from Jackson and Ormrod (1998) and three from Greenwood et al. (2002). In each topical section of the course, the Monday instructor started with mostly Jackson and Ormrod (1998) cases and ended with a Greenwood et al. (2002) case after multiple theories had been introduced. In the Monday section, case discussions always followed class sessions in which the specific theories relevant to that case had been discussed while in the Tuesday section there were many different relationships between the theories just covered in class and those most relevant to analyzing the cases (see columns four and five of Table 1). In the motivation portion of the Tuesday section, there was considerable overlap between the theories just discussed in class and those relevant to analyzing the cases; but in the learning portion of that section, in two of the three discussions (*To Retain or Not to Retain* and *Withdrawn Wanda*) there was little connection between the theories that had been just discussed and those that were relevant to the cases. Part of the reason for this is the Tuesday instructor felt it was more difficult to find cases in his preferred casebook Greenwood et al. (2002) that were both interesting and realistic, and helpful for illustrating specific learning theories.

There were a variety of likely effects of these different choices of cases to discuss on the embodiment of three of the Engle & Conant

(2002) principles, each of which will be discussed separately.

Accountability

With respect to *accountability* to the discipline of educational psychology, the explicit association of the Jackson and Ormrod (1998) cases with psychological theories was a resource to the Monday instructor and the student teachers in her class about which psychological concepts would be most relevant to each case. In addition, these cases included little extraneous information, making it easier for student teachers to pick out theory-relevant passages. Thus, by starting with these shorter and simpler cases, the Monday instructor may have encouraged the student teachers to orient towards case analysis as a process of applying theories to case examples, an orientation they seemed to retain through the discussions of the Greenwood et al. (2002) cases in that section. This orientation was further supported by the instructor's care in making sure that the theories discussed in each class were the same ones as those that were to be used in analyzing the case that followed. This instructional strategy made it more likely that student teachers in the Monday night section would have cognitively available the relevant disciplinary concepts for each case discussion, supporting accountability to the discipline.

In contrast, students' identification of relevant theories to analyze the Tuesday section's cases was made more difficult by the exclusive use of the longer, more complex Greenwood et al. (2002) cases and the not-so-close overlap between the theories most relevant to each case and those presented immediately prior to the case discussion in class. Student teachers needed to sift through a lot of case material to find the theory-relevant passages, and were given fewer clues from the cases themselves and from the topic of preceding lectures about which theories might be most relevant. In the two discussions in which the case had little connection with the theories that had just been presented, the message to student teachers might have been that in effect the theory they had been just learning about was not all that useful for addressing such real-world classroom problems. Thus, the different cases the instructors chose to discuss may have encouraged the Monday student teachers to hold themselves more accountable to educational psychology concepts than the Tuesday student teachers. On the other hand, one might argue that when the Tuesday student teachers did apply some theoretical concept to a case, this

application would be more likely to transfer to how they would address real classroom problems, since in real classroom situations teachers often have extraneous information to sift through and no one is usually available to give them clues about which theoretical lenses are most relevant.

Problematizing

With respect to *problematizing*, the Monday section instructor's initial use of the more straightforward Jackson and Ormrod (1998) cases and her encouragement to use particular psychological concepts to address them may have led the Monday student teachers to view the task of case analysis as nothing more than correctly labeling aspects of the cases using psychological terms. That is, they might have learned to view case analyses as an academic exercise rather than an opportunity to solve the kinds of practical problems that they might face as teachers in their own classrooms. In contrast, the Greenwood et al. (2002) cases used throughout the Tuesday section presented multiple, often interacting, practical problems, and thus they tended to be viewed as problematic by student teachers up to the very end of a discussion. Student teachers in this section viewed the extensive details of these cases as demonstrating how realistic the case situations were. Monday night student teachers did not view the Greenwood et al. (2002) cases in this positive light; rather, they complained about the length and irrelevant details in those cases, perhaps because they were already oriented to case discussion as a theory-application exercise. The Monday student teachers also explicitly rejected some case problems from each casebook as being unrealistic, arguing that no reasonable teacher (like themselves) could possibly have made the mistakes that the case teacher had. They held this attitude despite the fact that both casebooks emphasized that their cases had been drawn from real classroom incidents and that the Monday instructor had even assigned students to read the statement asserting this in Jackson and Ormrod (1998). The Monday night student teachers' views that the problems presented in many of the cases were unlikely to happen to them made those cases less problematic to those teachers, and reduced their engagement in analyzing and discussing them.

Authority

The degree to which the student teachers viewed the cases as *problematic* also affected their perceived *authority* in the case discussions, especially the degree to which student teachers in each of the sections demonstrated a personal *stake* in the discussions. Because the Monday case discussions became distanced from the practical problems embedded in the cases, and some cases were viewed as unrealistic, contributions from Monday student teachers tended to be more about which formal concepts were and were not relevant to a case rather than how each participant might personally address the problems in the case. In addition, the Jackson and Ormrod (1998) cases offered fewer specific details to remind student teachers of similar events that they had experienced or were experiencing in classrooms. To compound this, positioning case discussions immediately following theoretical material identified as relevant may have discouraged these student teachers from sharing how the cases related to their personal experiences as it may have inadvertently sent the message that only presented theory, and not personal experience, was relevant to the analysis of each case. Making fewer connections with their personal experiences seemed to further reduce these student teachers' *stake* in the case discussions: these were either problems that other (less thoughtful) teachers might face or else they involved nothing more than the standard academic exercise of learning how to use specialized terms.

In contrast, the opposite dynamic seemed to operate in the Tuesday section. Not being pushed by the cases or the structure of the course to use newly introduced psychological concepts, student teachers drew on what they already knew, helping them to take ownership of the problems presented and increasing their *stake* as the authors of their own perspectives. The Greenwood et al. (2002) cases also tended to remind these student teachers of things that had happened or were happening to them. When these instances were shared in discussion, this validated the cases as practical and relevant, thus helping to increase each teacher's personal *stake* in the discussion. The implicit message was that ways of thinking about and trying to solve these problems during case discussion might end up being useful in one's future practice as a professional. Given that, the Tuesday night teachers appear to find it important to share their ideas with each other and learn from what others had to say, thus supporting accountability to others in the class.

This analysis of the effects of different case choices begins to explain why there was wider participation in the Tuesday case discussions, more use of theoretical terms in the Monday case discussions, and more references to classroom experiences in the Tuesday case discussions. However, it cannot account for all of the results we found, as some of our comparisons were between discussions of the same two cases from Greenwood et al. (2002), both of which were discussed immediately after relevant theoretical material had been introduced in both sections. To fully explain our findings, therefore, it is necessary to also examine what happened during the discussions themselves, the focus of the next two sections of our analysis.

How Case Discussions Were Introduced

The differences in how instructors introduced case discussions in each section paralleled the differences in their choices of cases to be discussed. In the Monday section, the instructor generally encouraged student teachers to apply one or more specific psychological theories or concepts to the case, and to give evidence for how they had applied them. For example, in preparation for the first case discussion, student teachers were asked to respond in writing to the following prompt: "From the perspective of social-cognitive theory and its relevant concepts, what is the initial problem that needs to be resolved in this case? Be sure to cite specific evidence from this case." In other discussions, student teachers were asked to respond to questions adapted from the casebook, which often asked about how a specific theory or concept applied to the case. For most discussions, the instructor also provided blank charts on the chalkboard to be filled in during the discussion that included specific theories or concepts as major headings, with additional space for evidence from the case. So in general, the Monday instructor framed case discussions as a process of determining what was true about the case vis-à-vis a particular psychological theory or theories. As the course went on, the instructor made more references at the beginnings of discussions to the importance of student teachers' sharing their own ideas and practical experiences, but this was not taken up to any significant extent by the student teachers, perhaps because norms for how to discuss cases had already been set.

The Tuesday instructor, in contrast, specifically avoided giving any guidance to the student teachers at the start of each discussion about which educational psychology concepts or theories they should apply to the case. Lists of

concepts relevant to the cases that appeared in the Greenwood et al. (2002) book were omitted from the copies that were distributed to student teachers. In addition, the questions the Tuesday instructor used to launch discussions asked student teachers to interpret and solve the problems in the case, not to apply psychological theories to them. For example, the Tuesday instructor began the first whole-class case discussion by asking student teachers “What is the problem or problems in this case?” After some discussion, he then asked them, “What do you think the causes of these problems were?” In the second case discussion, the instructor first noted that the process would work “like last week’s case” and then asked the student teachers, “What is going on in this case?” and “What was the problem or problems?” As in the question above that began with “What do you think,” occasionally this instructor would explicitly ask the student teachers to report what they thought, rather than just what was supposed to be true given the class materials. So the Tuesday instructor tended to frame case discussions by having the student teachers address the problems raised by the cases, sometimes from their own perspectives.

Problematizing

These differences between the instructors in how they began and conducted case discussions greatly affected how *problematizing* was embodied. Consistent with choices of cases to discuss, the Monday instructor’s instructional methods tended to turn the real-world problems of the cases into an academic exercise of applying theoretical concepts to data while the Tuesday instructor’s methods encouraged student teachers to focus on the practical teaching problems that were embedded in the cases. In addition, student teachers in the Tuesday section were given the *agency* to define the problems in the cases themselves while student teachers in the Monday section at best were given agency over deciding which concepts or other elements of a theory could be applied to the case. So when student teachers in both sections were addressing the same case, the Tuesday student teachers were encouraged to have more *agency* vis-à-vis *problematizing* the case content than the Monday student teachers were.

Authority

With respect to supporting *authority*, the objective way in which most of the Monday discussion tasks were presented tended to

distance the student teachers from their own contributions to the discussions. Rather than being placed in the role of practitioners, analysts or theorists, people who have the *agency* to address the case from their own perspectives, these student teachers were instead positioned as students doing a class exercise. This also occurred in the Tuesday section, but not to the same extent. In addition, by withholding any clear direction on what student teachers *were to use* in responding to the case, the Tuesday instructor in effect gave student teachers the *agency* to respond publicly to the case with their own actual ideas about it, whatever they might be.

Accountability

Finally, with respect to *accountability*, the Monday instructor’s way of structuring case discussions made it more than clear that student teachers were expected to use theoretical concepts in their contributions and to provide evidence from the case for how they were relevant, thus encouraging them to account for how their contributions were responsive to disciplinary norms and ideas. On the other hand, by providing little space (literally, with the charts) for non-theory relevant comments, this practice may easily have discouraged explanations based on participants’ own experiences. In contrast, the Tuesday instructor’s way of conducting case discussions provided almost no encouragement for student teachers to use theoretical concepts in the discussions; the instructor assumed that student teachers would perceive the preceding lecture as providing such encouragement. That the Tuesday student teachers did not usually take this up can be in part be understood by the analysis in the preceding section as well as the one to follow.

How Instructors Responded to Student Teachers’ Contributions

Both instructors attempted to avoid evaluating student teachers’ contributions. However, both ended up providing subtle cues that distinguished between contributions that were more or less favored by the instructor. The Monday instructor focused on recording the gist of what each student teacher said in the spaces on the chart on the chalkboard, frequently revoicing the teacher’s comment while doing so. About half of the time, and especially with points that the instructor found promising, she would add a short substantive comment to what the student teacher had said. In contrast, when a

student teacher's contribution was perceived as being mistaken in some way, the Monday instructor tended to ask the teacher to elaborate on what he or she had said in a fairly targeted way that often indicated what was mistaken about the original contribution. For example, when a teacher stated that there was a "lack of motivation" among many of the students in a case, the instructor responded by asking "Lack of motivation with respect to...?" thus indicating that the teacher had not been sufficiently precise about the object of the students' lack of motivation.

In contrast, the Tuesday instructor's modal response to a student teacher's contribution was less directive, often something to the effect of "good point." Sometimes this was followed up with a substantive comment about what the teacher had said. Occasionally, the instructor made no verbal reaction to what a teacher had said, simply calling on the next participant. We have not discerned any clear pattern in the Tuesday night discussions related to which contributions were given which of these responses. However, when a student teacher provided a response that showed a glaring misunderstanding (something judged to have occurred very rarely), the Tuesday instructor typically paused, displayed a mildly quizzical look, and then quickly called on the next teacher.

Authority

With respect to supporting student teachers' *authority*, both instructors' practices had some benefits. The Monday instructor's practice of recording student teachers' ideas and giving them credit for them through revoicing (see O'Connor & Michaels, 1993, 1996) generally helped to position the student teachers as *stakeholders* or public authors in the discussion. Similarly, the Tuesday instructor's oft-repeated refrain of "good point" may have positioned those student teachers as *stakeholders* as well. In addition, by usually responding so positively to student teachers' contributions, this instructor may have made student teachers feel safer about sharing whatever they really thought about the cases (*agency*) than they otherwise might have felt.

Accountability

With respect to *accountability*, however, neither instructor's practices were especially helpful. Rather than having student teachers *account* for how their contributions did or did not make sense with respect to disciplinary ideas, the

Monday instructor provided subtly different responses to stronger and weaker contributions. The *authority* for judging the quality of contributions was held exclusively by the instructor, with student teachers needing to discern what counted as a positive versus a negative evaluation. Most of the time, the Tuesday instructor conveyed the idea that student teachers' contributions were fine, but he did not provide opportunities for them to evaluate their ideas with respect to disciplinary ideas either. Norms around evidence were also not established. Therefore opportunities for both classes to explore their ideas in order to understand what was reasonable and misguided in them were missed, in effect reducing both sets of student teachers' *accountability* to the discipline.

Problematizing

These differential patterns of instructors' responses to teachers' contributions had no obvious impact on the student teachers' *problematizing* of the case situations, except insofar as teachers were not involved in evaluating their own ideas.

Differences in Effects of Instructors' Grading Practices

Until now, our analysis of the differences in student teachers' engagement between the two sections has only considered what the instructors did during the case discussions themselves or as part of instructional planning for them. However, there were differences between the sections in the importance that students placed on their course grades and the instructors' grading practices that we think also had important impacts on the shape of the case discussions.

Specifically, we found out near the end of the course that the job market for most of the student teachers in the Monday night section was very tight, with many of them perceiving straight A's as essential to ultimately secure a regular teaching job, especially in the local area. According to the classroom supervisors we consulted later, the job market was especially tight that year for students in the elementary education program, who comprised 72% of the student teachers in the Monday section. There were no openings that year for elementary teachers in the local urban school district, with a similar lack of opportunities in many desirable districts nearby. The job market for the rest of the Monday section students (primarily participants in the secondary social studies MAT program) in that section was also

tight, though not to the same degree. In retrospect, it is not surprising that many of the student teachers in the Monday section appeared to be especially stressed about grades and were very attentive to any cues from the instructor about what kinds of contributions she would most favorably evaluate. These grading-related challenges were non-existent or significantly reduced in the Tuesday section. Most of the students in that section were enrolled in the secondary science and foreign language education programs. Foreign language teachers commonly achieved 100% placement in entry-level teaching positions in the local area, with Spanish teachers being in particularly high demand. And although getting a science teaching position was more difficult in the local area, student teachers were very aware that there were parts of the country in which a new science teacher could easily secure a position. Thus, overall, getting high grades was probably perceived as less essential by the Tuesday student teachers as compared to the Monday student teachers.

The Monday instructor, initially unaware of these practical realities, made the situation worse through several grading practices. First, she had been told by the department offering the course that her class should receive a uniform mix of A's and B's, with C's being given out only for very poor performance. She adjusted her grading accordingly, so that a midway score of a 2 on weekly assignments would be equivalent to a B+. The instructor assumed a 2 would be interpreted as a relatively neutral grade by the students, labeled it as such on the syllabus ("2 = fine"), and assigned this grade much more frequently than 1s or 3s during the first several assignments. However, a B+ and therefore a 2 was perceived as anything but a neutral grade by these prospective teachers who believed they needed straight A's to get jobs. We also suspect that some of the student teachers may have implicitly converted a score of 2 out of 3 on the reflection assignments to the percentage 67%, a very poor score in most educational contexts. In contrast, the Tuesday instructor assigned a greater proportion of 3's than 2's on the initial weekly assignments, so fewer student teachers in his class had any cause to be concerned about their grades. A student teacher's participation in case discussions in the Tuesday section might affect his or her final grade in terms of a vague 10% of the grade allocated to class participation, but given that this instructor provided generally positive reactions to the students' contributions, there was no particular reason for most of them to be concerned about this either.

These differences matter for understanding the nature of student teachers' engagement in the case discussions in each section because of how these graded assignments were associated with case discussions in the organization of course activities. In the first several discussions in the Monday section, cases that the student teachers had just finished analyzing for a grade were the same cases that were then discussed in class. Thus, one significant focus of attention for these student teachers during several of these initial case discussions was how their reflection papers might fare in the grading process as compared to those of others. In fact, we recorded one side comment by a participant in the *Bulletin Board* discussion who remarked to a colleague that she must have gotten her case analysis wrong when someone else brought up a point that was not included in her analysis. In the Tuesday section, the same written case was never the focus of both a graded reflection assignment and an in-class discussion, again encouraging less focus on "right answers" during case discussions in this section.

Authority

As compared to the Tuesday section student teachers, the tight job market generally reduced the ability of the Monday section student teachers to engage in the case discussions for the purpose of their own personal growth as teachers or as interested learners of psychology (*authority*). Instead, these student teachers came to the course very attentive to the Monday instructor as an important outside authority who would be judging their work, and with that, shaping their future job prospects. This orientation towards the instructor as the final arbiter of their work made it even more challenging for her to nurture the student teachers' own independent *authority* in the discipline and about teaching problems during the public forum of class discussions. Not surprisingly, these student teachers especially sought to produce what the instructor was "looking for" rather than what they themselves actually thought about the case that was being discussed. It is also possible that these students' desire for a better grade might have driven some of them to participate more often in discussions than they might have otherwise—if so, such participation could be considered to be partially coerced by the situation, and so might or might not have represented true engagement with the material. At the same time, the instructor's initial practice of using the same cases for both a graded assignment and as the basis of public case discussions increased the focus on the instructor's *authority* while compromising—or at

least neglecting—development of the student teachers' *authority*. The instructor eventually abandoned using the same cases as the focus of both graded assignments and in-class discussions, but by that time, the class' focus on the authority of the instructor over their own authority had been firmly established. This did not occur in the Tuesday section, so the student teachers' *authority* was not impinged upon in this manner. As previously described, the Tuesday instructor's practice of not pushing students to use psychological concepts in case discussions gave these student teachers more *agency* in addressing the cases. Also, the instructor's generally positive comments about contributions to discussion and the Tuesday students' relatively fewer worries about grades may have given them more freedom to express how they really felt about the cases, positioning them as legitimate authors of their contributions.

Accountability

One might argue that the relationship between the case discussions and the Monday students' graded reflection papers could have fostered their *accountability* to the discipline to the extent that the grading criteria reflected disciplinary norms, something that the Monday instructor did indeed work hard to achieve. However, this at best functioned as a form of external accountability that was imposed on the student teachers from the outside, rather than the kind of dynamic internal accountability proposed by Engle & Conant (2002). For that kind of internal accountability to occur, learners' influence in their learning environment must be affected by how well they can 'account' for the disciplinary appropriateness of what they are doing. Neither section used grading practices that helped to support this.

CONCLUSIONS AND IMPLICATIONS

As the above analyses show, many of the choices made by these instructors contributed to the embodiment of some of the Engle & Conant (2002) principles while simultaneously causing difficulty with others. Most notably, we find that neither section was successful at striking a balance between supporting student teachers' *authority* in engaging with case-based problems while also holding them *accountable* to others and to disciplinary norms and concepts. The Monday section tended to emphasize *accountability* to the discipline while impinging on student teachers' *authority* while the Tuesday section tended to encourage student teachers' *authority* while under-emphasizing *accountability*

to the discipline. We think that this dilemma is one that faces many instructors pursuing constructivist teaching, especially in the context of case-based instruction. In addition, we have pointed to the challenge of keeping alive in discussions the practical teaching problems that are embedded in cases (supporting *problematizing*) while somehow still helping student teachers to learn to appreciate how theoretical lenses can usefully inform them (*accountability* to the discipline). Finally, there is the challenge of facilitating discussions so that student teachers draw on both disciplinary and practice-based knowledge, eventually coordinating them with each other. In this way, this study extends Engle and Conant's (2002) notion of *accountability* to consider accountability to practice-based as well as disciplinary knowledge.

Implications for Future Research

Although the study has done a good job of identifying several potential challenges of embodying the principles for fostering productive disciplinary engagement in the context of case-based teaching, further work needs to be done to provide additional evidence for these claims. In the current study, several factors besides the embodiment of the principles, such as additional differences between the instructors and student populations that we did not investigate may have been partly responsible for the differences we observed. We worked to include several of these instructor and student population differences into the analysis above, but it is certainly possible that there were other important factors that we did not recognize. Second, with respect to explaining the degree of engagement, a key difference between the sections that we have not considered yet is the fact that the Monday section included more students than the Tuesday section, and therefore it might be expected that proportionately fewer students would participate in discussions in this class, over and above other factors. However, despite the intuitive plausibility of this idea, previous research investigating the effect of class size on the proportion of students participating in discussions has found no such relationship (e.g., Nunn, 1996; Shapson, Wright, Eason, & Fitzgerald, 1980) so we were not as concerned about this as we might have been.

Still, future research could be designed to provide tighter and more compelling contrasts. In particular, a very helpful next step would be to study the same instructor teaching two sections that draw from a similar pool of students while using methods for facilitating case discussions that systematically contrast with each other. In

fact, this is exactly the kind of research that we are now pursuing (Faux & Engle, 2005).

Implications for Theory

Despite these potential empirical shortcomings, however, this study has been quite generative theoretically. First, we were able to successfully extend the notion of productive disciplinary engagement to include the discipline of educational psychology as well as practitioner discourses around schooling. Second, we found that the problems we had in achieving the kinds of productive disciplinary engagement that we had aimed for were in fact associated with corresponding difficulties that we had in embodying the Engle and Conant (2002) principles, thus providing further support for this theory. At the same time, our failures to fully embody the principles in our teaching despite our best efforts have helped us to recognize the importance of thinking about these principles in a much more historical manner than we had done previously. It mattered, for example, the student teachers in the Monday section had, on the whole, few past experiences in which they were expected or even allowed to have authority in the classroom. Combined with needing positive evaluations from the instructor to support their hoped-for future trajectories, this made truly embodying the principle of authority especially challenging with this group. Thus, rather than authority being something that an instructor can simply decide to give to students, students often will come to have authority through a more extended process as old norms are gradually transformed into new ones.

Implications for Future Use of Case Discussions

One reaction to our results and all the challenges they point to is to conclude that case-based teaching is not as promising for addressing the theory-practice gap as one might have supposed. This is not our intention. Instead, we wish to re-emphasize with others that “the case-based method” is neither a magic bullet nor a single instructional strategy, and that what matters is how you carry out this method (Levin, 1999). By carefully reflecting on the possible causes of our successes and failures as new case-based discussion facilitators, we believe we have contributed towards a fuller specification of some of the challenges that many instructors new to case-based methods are likely to face. In so doing, we also have developed some conjectures about how it might be possible to facilitate case-based discussions in a more effective manner

that we are currently investigating in our ongoing design-based research (Faux & Engle, 2005). We close by offering some of those ideas for others to try out, adapt, and investigate.

Organizing around Common Problems of Teaching

The first idea that we are experimenting with is to focus case discussions around common “problems of teaching” (Lampert, 2001), a means of better supporting both *problematizing* and *authority* with prospective teachers. In a version of the course that was later presented by the Monday instructor to a later cohort of Monday students from the same two certification programs with a similarly tight job market, each session of the course was organized by a typical teaching problem that beginning teachers often face (e.g., managing disruptions, engaging disengaged students, addressing student misunderstandings, and the like, see Roehrig, Pressley, & Talotta, 2002). Student teachers read and discussed one or two cases that illustrated that problem and also had opportunities to share with each other and the class how the problem might or might not be arising in their current classrooms. The purpose of this last activity was to emphasize the value of the student teachers’ classroom experiences, and to provide them with opportunities to validate the cases for each other as relevant to their practical concerns. Each session also included readings and instruction about a psychological theory, but this theory was chosen because of its potential for helping to address the type of problem in focus that day, which was illustrated by the cases. Thus, theories were framed as potentially useful tools for student teachers to address the practical problems that they cared about in their classrooms. In addition, the student teachers were free to address the problems they cared about during the discussions as they were not graded on their analyses of these cases. In this way, we are beginning to address the challenge of *problematizing* in a way that provides a bridge between student teachers’ interests and experiences, and the theoretical resources that are available from educational psychology. This organization also seems to do a better job of supporting student teachers’ *authority* while still not neglecting *accountability*.

Supporting Both Authority and Accountability by Establishing Authority First

The second key idea that we have developed because of this work and our other research is that one way to embody both *authority* and *accountability* may be to establish student

teachers' *authority* over the content first, and then to work to gradually hold student teachers more and more *accountable* to the discipline. Attempting to do both from the start, as the Monday instructor did, ended up unwittingly trammeling on student teachers' authority as they interpreted calls for them to hold themselves *accountable* to the discipline as a message that their own ideas were not valued. Stepping back from this result, we are beginning to feel that of the Engle & Conant (2002) principles, having *authority* in the classroom is the one that is most likely to be most foreign to many student teachers' experiences as students. In addition, in other work, we have observed the benefits for teachers' construction of knowledge if teachers' *authority* is first established, and then they are gradually held more accountable to others, starting with themselves and their peers, and finally ending with disciplinary authorities (Engle, 2004).

Within case discussions themselves, we have developed two methods of embodying *authority* first whose relative effectiveness we are systematically testing in a quasi-experimental design involving two sections taught by the Tuesday instructor (see Faux & Engle, 2005 for initial results). The first, which we call the "prompting theory" method, is to begin a case discussion with an open-ended question that asks student teachers what they think about the problems in the case and how to solve them, but does not refer explicitly to theoretical ideas. After discussion has proceeded for a while, if student teachers are making little use of relevant theory to address it, the instructor then asks student teachers to consider whether anything from the preceding class session on the theory might be relevant to the case. If especially important for the deepest understanding of a particular case, the instructor might go so far as specifically prompt for student teachers to evaluate the relevance of a particular concept vis-à-vis the case. "Prompting for theory" is a method for embodying *authority*, then *accountability* as student teachers are first asked to address the case from their own perspectives, whatever they might be, and are then asked, again from their own perspective, to apply and then evaluate the usefulness of particular theoretical ideas.

The second method, which we call "revisiting discussions," involves changing the usual ordering of a case discussion to follow the introduction of the theory for which it is most relevant. This method, which is in part inspired by practices investigated by Lundeborg and Scheurman (1987) and Engle (2004), involves opening class with a case discussion. Before the

discussion has fully wound down, however, the class then shifts to presentation of material relevant to psychological theories. Finally, class ends by returning to the opening case, but this time considering it in light of what was learned in class about the theories. In the first half of the case discussion, the focus is on student teachers' authority vis-à-vis the case. In the second half, the focus is on considering what disciplinary ideas might contribute to understanding and addressing problems in the case. If class ideas in each part of the discussion are recorded, this method potentially provides opportunities for the class to consider what theory contributes over and above other ways of addressing the cases.

Concluding Thoughts

We believe that through our on-going empirical and theoretical analyses we have gained valuable insight into some critical issues to consider in facilitating effective case-based discussions. As Smith (2005) points out, the skills related to being a successful case-discussion facilitator are distinctive and present numerous challenges. Among the challenges Smith describes is the "Transferring of ownership of the learning of the class [students]. . ." (p. 3). Effective case discussions reconfigure the traditional student-instructor relationship. As Sudzina (1997) argues, this transfer of authority from instructor to students departs from traditional instruction. We would agree. Moreover, as our research has shown, orchestrating effective case discussions is a complex undertaking. Within the framework of our research, we have demonstrated that a traditional approach to instruction, i.e. holding students *accountable* without establishing their *authority*, jeopardizes the effectiveness of case-based instruction.

Case-based methods to teach educational psychology are often intended to reflect a social constructivist pedagogy in which students are given the means to bridge the theory-practice divide (Cobb, 1996; Smith, 2005; Sudzina, 1997). From this perspective, the learner actively constructs new pedagogical knowledge from actively engaging with cases in light of both theory and practice. As Smith and others point out, theory that remains abstract is of little use to our students as they face decisions in the classroom. So are informal observations of practice with little grounding in more systematic ideas. Thus, it is incumbent on us as instructors to find and test ways to help prospective teachers to build bridges between theory and practice. We hope that this sharing of our findings,

experiences, and theoretical ideas will help others

in their efforts to do likewise.

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